

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
13 April 2006 (13.04.2006)

PCT

(10) International Publication Number  
**WO 2006/039222 A3**

(51) International Patent Classification:  
**G06F 9/455** (2006.01) **G06F 9/46** (2006.01)

(21) International Application Number:  
PCT/US2005/034302

(22) International Filing Date:  
23 September 2005 (23.09.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

10/711,737	30 September 2004 (30.09.2004)	US
10/711,736	30 September 2004 (30.09.2004)	US
10/711,735	30 September 2004 (30.09.2004)	US
10/711,732	30 September 2004 (30.09.2004)	US
10/711,734	30 September 2004 (30.09.2004)	US
10/711,733	30 September 2004 (30.09.2004)	US
10/956,723	1 October 2004 (01.10.2004)	US
11/231,284	19 September 2005 (19.09.2005)	US
11/231,316	19 September 2005 (19.09.2005)	US
11/231,317	19 September 2005 (19.09.2005)	US
11/231,315	19 September 2005 (19.09.2005)	US
11/231,370	19 September 2005 (19.09.2005)	US

(71) Applicant (for all designated States except US): **CITRIX SYSTEMS, INC.** [US/US]; 851 West Cypress Creek Road, Fort Lauderdale, FL 33309 (US).

(72) Inventors; and

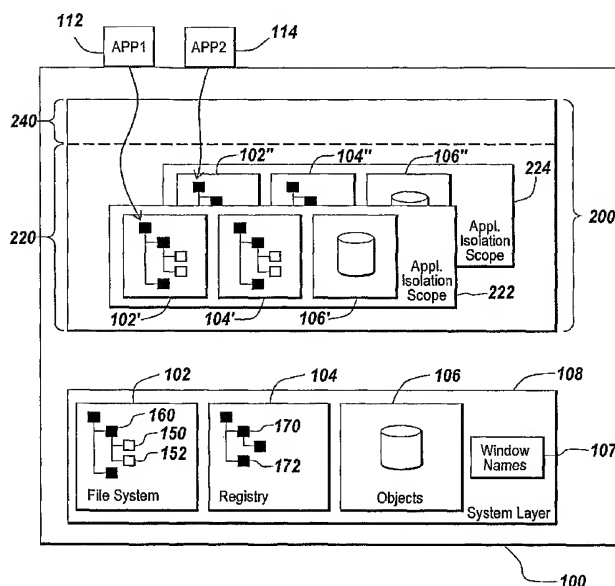
(75) Inventors/Applicants (for US only): **LABORCZFALVI, Lee, George** [AU/AU]; c/o Citrix Systems Australasia R & D Pty Ltd., Level 3, 1 Julius Avenue, North Ryde, NSW 2113 (AU). **ROYCHOUDHRY, Anil** [AU/AU]; c/o Citrix Systems Australasia R & D Pty Ltd., Level 3, 1 Julius Avenue, North Ryde, NSW 2113 (AU). **BORZYCKI, Andrew, Gerard** [AU/AU]; c/o Citrix Systems Australasia R & D Pty Ltd., Level 3, 1 Julius Avenue, North Ryde, NSW 2113 (AU). **CHIN, Huai, Chiun** [MY/AU]; c/o Citrix Systems Australasia R & D Pty Ltd., Level 3, 1 Julius Avenue, North Ryde, NSW 2113 (AU). **MAZZAFERRI, Richard, James** [AU/AU]; c/o Citrix Systems Australasia R & D Pty Ltd., Level 3, 1 Julius Avenue, North Ryde, NSW 2113 (AU).

(74) Agent: **LANZA, John, D.**; Choate, Hall & Stewart, Two International Place, Boston, MA 02110 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR VIRTUALIZING WINDOW INFORMATION



(57) Abstract: A method and apparatus for virtualizing access to windows includes a hooking mechanism, a window name virtualization engine, and an operating system interface. A request relating to a window from a process executing in the context of a user account is received, the request including a virtual window name. A determination is made for a literal name for the window, using a scope-specific identifier. A request is issued to the operating system including the determined literal window name. A window handle is associated with the determined virtual window name.



WO 2006/039222 A3



CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

**(88) Date of publication of the international search report:**

27 July 2006

**(84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No

PCT/US2005/034302

**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. G06F9/455 G06F9/46

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC, COMPENDEX

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/25894 A (EJASENT INC; HIPP, BURTON, A; BHARADHWAJ, RAJEEV) 12 April 2001 (2001-04-12)	1-29
Y	page 1, line 3 - page 3, line 10 page 5, line 20 - line 26 page 9, line 17 - page 10, line 28 page 14, line 8 - page 15, line 9	40,51,64
X	US 2003/101292 A1 (FISHER JOSEPH A ET AL) 29 May 2003 (2003-05-29) page 1, left-hand column, paragraph 2 - page 1, right-hand column, paragraph 10 ----- -/--	1-29

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents :

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

13 April 2006

Date of mailing of the international search report

08/05/2006

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Lo Turco, S

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2005/034302

## C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MATT PIETREK: "Intercepting API Functions in Win32" PC MAGAZINE - US EDITION, ZIFF-DAVIS, NEW YORK, NY, US, vol. 13, no. 19, 11 August 1994 (1994-08-11), pages 307-312, XP002102766 ISSN: 0888-8507 the whole document -----	1-29
A	BOYD T ET AL: "Process migration: a generalized approach using a virtualizing operating system" PROCEEDINGS OF THE 22ND. INTERNATIONAL CONFERENCE ON DISTRIBUTED COMPUTING SYSTEMS. ICDCS 2002. VIENNA, AUSTRIA, JULY 2 - 5, 2002, INTERNATIONAL CONFERENCE ON DISTRIBUTED COMPUTING SYSTEMS, LOS ALAMITOS, CA : IEEE COMP. SOC, US, vol. CONF. 22, 2 July 2002 (2002-07-02), pages 348-355, XP010595550 ISBN: 0-7695-1585-1 the whole document -----	1-29
X	"Taking Command Of Windows XP"[Online] 3 May 2004 (2004-05-03), XP002376994 Retrieved from the Internet: URL: <a href="http://media.wiley.com/product_data/excerpt/34/07645582/0764558234.pdf">http://media.wiley.com/product_data/excerpt/34/07645582/0764558234.pdf</a> [retrieved on 2006-04-13] -----	30-39, 41-50, 52-63, 65,66
Y	page 11 - page 14 -----	40,51,64
X	WO 03/029977 A (CITRIX SYSTEMS, INC) 10 April 2003 (2003-04-10) -----	30-39, 41-50, 52-63, 65,66
Y	page 1, paragraph 1 - page 6, paragraph 18 -----	40,51,64

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2005/034302

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-29

Method (and system) for virtualizing access to windows. A request relating to a window from a process executing in the context of a user account is received, the request including a virtual window name. A determination is made for a literal name for the window, using a scope-specific identifier. A request is issued to the operating system including the determined literal window name. A window handle is associated with the determined virtual window name [see description on page 3 lines 25-31].  
---

2. claims: 30-66

Method (and system) for associating a file type of a file with one or more programs. A request is received to store in a configuration store file type association information. It is determined from the request an application program to be associated with a file type in the configuration store. An association of the file type with a chooser tool is written to the configuration store [see description on page 5 lines 17-22].  
---

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2005/034302

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0125894	A	12-04-2001	AU 1074801 A	10-05-2001
			AU 1075101 A	10-05-2001
			AU 7864700 A	10-05-2001
			AU 7867000 A	10-05-2001
			AU 7867100 A	10-05-2001
			AU 7872100 A	10-05-2001
			AU 7996200 A	10-05-2001
			AU 8000800 A	10-05-2001
			WO 0125949 A1	12-04-2001
			WO 0126267 A1	12-04-2001
			WO 0125950 A1	12-04-2001
			WO 0125951 A1	12-04-2001
			WO 0126031 A2	12-04-2001
			WO 0125920 A1	12-04-2001
			WO 0125926 A1	12-04-2001
<hr/>				
US 2003101292	A1	29-05-2003	NONE	
<hr/>				
WO 03029977	A	10-04-2003	CA 2462271 A1	10-04-2003
			CN 1599901 A	23-03-2005
			EP 1470482 A2	27-10-2004
			JP 2005505051 T	17-02-2005
<hr/>				